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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,103	02/07/2001	Akihisa Okumura	1035-303	7772

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EXAMINER

ILDEBRANDO, CHRISTINA A

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 08/25/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/778,103

Applicant(s)

OKUMURA ET AL.

Examiner

Christina Ildebrando

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 08/973,684.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatsuji et al.

Nakatsuji et al. (EP 0 624 393) discloses a catalyst and process for the reduction of nitrogen oxides and hydrocarbons from automobiles (page 1, lines 1-7 and page 5, lines 25-31). The catalyst composition comprises cerium oxide and a Group VIII metal such as iridium supported on a solid acid carrier (page 2, lines 45-50 and page 3, lines 55-58). The use of cerium oxide in combination with iridium is exemplified. Suitable solid acid supports include $\text{TiO}_2/\text{SO}_4^{2-}$ and $\text{ZrO}_2/\text{SO}_4^{2-}$ (page 3, lines 24-26). The examples detail contacting the exhaust gas with the catalyst at temperatures of 250°C, 300°C, 350°C, 400°C, or 450°C (page 9, lines 35-55).

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Nakatsuji et al.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder in view of Shigeru et al.

Lauder (US 4,049,583) discloses a catalyst composition and process for the purification of exhaust gases from internal combustion engines (column 1, lines 15-21). The catalyst composition comprises metal oxide compounds of the type $[A^{1-x}A^2][B^{1-y}Me_y]O_3$ (column 4, lines 15-20), where "Me" can be iridium (column 4, lines 28-30), "A" can be cesium, rubidium, potassium, sodium, barium or silver, or rare earth metal oxides (column 4, line 65 – column 5, line 17), and "B" can be manganese, calcium, strontium, chromium, magnesium, iron, cobalt, nickel, or copper (column 5, lines 17-42). Specific examples of suitable compounds falling within the compositions instantly

claimed can be found at column 8, line 50, column 9, lines 4, 7, 10, 19, and 20, and column 10, lines 29 and 31. The reference teaches that the catalyst composition may be supported on refractory inorganic oxides such as silica, alumina, titania, and zirconia (column 12, lines 45-55). The reference teaches that the catalyst will catalyze the oxidation of hydrocarbons and carbon monoxide as well as the reaction between nitrogen oxide and carbon monoxide to give nitrogen and carbon dioxide (column 13, lines 44-69). The examples detail the use of temperatures falling within the ranges instantly claimed.

The reference does not disclose that the catalyst contains sulfur.

Shigeru et al. (JP 7-80315) discloses a catalyst for the purification of exhaust gas comprising iridium supported on a carrier including alumina, silica, titania, zirconia, SO_4/ZrO_2 , $\text{SO}_4/\text{ZrO}_2.\text{TiO}_2$, $\text{SO}_4/\text{ZrO}_2.\text{Al}_2\text{O}_3$ (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of Lauder in light of the disclosure of Shigeru et al. Shigeru et al. teaches the suitability of sulfated supports as carriers for catalysts in the purification of exhaust gases and further teaches the equivalence of these sulfates supports to the alumina, zirconia, and silica supports taught by Lauder. Because of the art recognized functional equivalence of the sulfated supports taught by Shigeru et al. to the supports taught by Lauder as carriers for catalysts useful in the purification of exhaust gases, it would have been obvious to one of ordinary skill to have substituted one known component for the other in the catalyst taught by Lauder.

Response to Arguments

5. Applicant's arguments filed July 7, 2003 have been fully considered but they are not persuasive.

With regards to the rejection over the Nakatsuji reference, applicant argues that the only catalyst exemplified by the reference which contains iridium does not have sulfur. However, a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). In this

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case, the reference clearly teaches a catalyst containing a metal such as iridium in combination with cerium oxide and a sulfated support, which teaching is considered to be sufficiently specific to constitute anticipation within the meaning of 35 USC 102.

With regards to the rejection under 35 USC 103 over Lauder in view of Shigeru et al., applicant argues that Lauder teaches a catalyst having ABO_3 structure and lacks sulfur. Applicant further argues that Shigeru does not teach a catalyst composition containing a metallic sulfate having iridium deposited thereon. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this case, there is nothing in the instant claims which would preclude the use of an active material in the form taught by Lauder. Further, the motivation to combine the teachings of the references to substitute the equivalent support taught by Shigeru for the support taught by Lauder is found in the references themselves, i.e. it would have been obvious to substitute one known functional equivalent for another, with a reasonable expectation of success. Applicant has not presented any evidence to rebut the prima facie case of obviousness set forth by the examiner.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

CAI
August 18, 2003


TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700